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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,158	05/01/2001	Shinichiro Iizuka	201085US2	2672

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EXAMINER	
SANDERS, ALLYSON N	

ART UNIT	PAPER NUMBER
2876	

DATE MAILED: 03/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/845,158	IIZUKA ET AL.	
	Examiner	Art Unit	
	Allyson N Sanders	2876	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 04 December 2002 .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-9,18-26 and 35-60 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-5,7,8,18-22,35-39,45-53 and 58-60 is/are rejected.

7)☒ Claim(s) 6,9,23-26,40-44 and 54-57 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-5, 7, 8, 18-22, 35-39, 45-53, and 58-60 are rejected under 35 U.S.C. 102(e) as being anticipated by Basting et al (6,014,206).

Regarding claims 1 and 18, a method and system of assembling an optical module, the method and system comprising the steps and means of: measuring an outgoing angle of a light emitted from a light-emitting element; and orienting the light-emitting element based on the outgoing angle is disclosed.

Basting et al teaches the following in regards to claims 1 and 18:

"The present invention is an apparatus and method for stabilization of laser output beam characteristics by automatically adjusting the angular and the lateral positions of the output beam." (Abstract, lines 1-4).

"A null position sensor detects the alignment beam. Based on information of the position and intensity of the alignment beam, the position of the high power beam is adjusted to optimize its alignment and output efficiency." (Col. 2, lines 6-9).

"The present invention is an apparatus and method for optimizing laser output beam direction by detecting and automatically adjusting the angular and the lateral positions of the output beam. A component of the output beam is detected at a near field location to determine the lateral position of the beam. A component of the beam is also detected at a far field location to determine the angular direction of the beam. Both the angular position and the lateral position of the output beam are then automatically adjusted to optimize the positional stability of the output beam." (Col. 2, lines 51-62).

Regarding claims 2 and 19, the method and system of claims 1 and 18 respectively, further comprising the steps and means of: detecting a far field pattern of light output from at least one optical component configured to receive the light emitted from the light0emitting element; and positioning the at least one optical component based on the FFP is disclosed.

Basting et al teaches the following in regards to claims 2 and 19:

"The present invention relates to a laser beam stabilization technique, and more particularly to optimizing a laser output beam by automatically adjusting angular and lateral beam positions based on near and far field beam detection information." (Col. 1, lines 6-10).

Regarding claims 3 and 20, the method and system of claims 2 and 19 respectively, wherein the step and means of detecting comprises means for detecting at least one of a divergent angle and an axis of the light output from the at least one optical component.

Basting et al teaches the following in regards to claims 3 and 20:

"The far field location is preferably in the focal plane of the focusing lens. Alternatively, it is geometrically "far away" from the laser beam exit 20. By far away, it is meant that the divergence properties of the laser beam no longer depend on the distance from the laser beam exit. As can be seen in FIG. 3, the divergence angle of the laser beam changes with distance from the laser beam exit 20 in the near field. However, in the far field, beginning at some further distance from the laser beam exit 20, the divergence angle no longer varies with distance from the laser beam exit 20." (Col. 7, lines 15-24).

Regarding claims 4 and 21, the method and system of claims 3 and 20 respectively, wherein the step and means for positioning the at least one optical component is based on the at least one of the divergent angle and the axis is disclosed.

See Basting et al's teachings in regards to claims 3 and 20.

Regarding claims 5 and 22, the method and system of claims 2 and 19 respectively, further comprising the step and means for fixing the position of the at least one optical component after the positioning step is disclosed.

Basting et al teaches the following in regards to claims 5 and 22:

"FIG. 1 shows a layout of a beam alignment system according to a preferred embodiment of the present invention. Using the beam alignment system of FIG. 1, precise determination of a lateral and an angular position of an output beam are achieved. After this determination is made, the angular and lateral beam positions are adjusted automatically for optimization of the direction, quality and intensity of the beam at critical locations along its optical path. The automated beam alignment system of FIG. 1 stabilizes the angular position and the lateral position of a laser output beam without time consuming manual realignment procedures via a feedback algorithm and electronics. The lateral beam position is stabilizable using the system of FIG. 1 to within 0.5 mm or better. The angular beam position is stabilizable to within 0.1 mrad or less." (Col. 4, lines 1-15).

Regarding claim 7, the method of claim 2, wherein: the step of detecting the FFP of the light output from the at least one optical component comprises detecting the FFP of the light output from a collimating lens configured to collimate the light emitted from the light-emitting element; and the step of positioning comprises positioning the collimating lens is disclosed.

Basting et al teaches the following in regards to claim 7:

"The second reflected component 23 is now refracted by a focusing lens 11 5 which is located along the beam path of the second reflected component 23. The purpose of the focusing lens is to produce a far field beam profile in only a small geometrical distance along the beam path of the component 23. When beam positional stabilization in one axial direction is desired, a cylindrical lens

may be used. When beam positional stabilization in two directions is desired, a spherical lens is preferably used." (Col. 5, lines 54-62).

Regarding claim 8, the method of claim 7, wherein: the step of detecting the FFP of the light output from the at least one optical component comprises detecting the FFP of the light output from a focusing lens configured to focus a collimated light output from the collimating lens; and the step of positioning comprises positioning the focusing lens is disclosed.

See Basting et al's teachings in regards to claims 3 and 20.

Regarding claim 35, a system for assembling an optical module, the system comprising: a light-emitting element; a far field patter (FFP) optical measurement system is configured to measure an FFP of a light output from the light-emitting element; and a stage configured to orient the light-emitting element based on the FFP is disclosed.

See Basting et al's teachings above.

Regarding claim 36, the system of claim 35, further comprising: at least one optical component configured to receive the light emitted from the light-emitting element, wherein the FFP optical measurement system is configured to measure an FFP of a light output from the at least one optical component; and a holding mechanism configured to position the at least one optical component based on the FFP of the light output from the at lest one optical component is disclosed.

See Basting et al's teachings in regards to claim 1.

Regarding claim 37, the system of claim 36 wherein the FFP optical measurement system is configured to measure at least one of a divergent angle and an axis of the light output from the at least one optical component.

See figure 3.

Regarding claim 38, system of claim 37, wherein the holding mechanism is configured to position the at least one optical component based on the at least one of the divergent angle and the axis is disclosed.

Basting et al teaches stabilizing the laser with a holding mechanism. Also see figure 3.

Regarding claim 39, the system of claim 36, further comprising a fixing mechanism configured to fix the position of the at least one optical component is disclosed.

"That is, the beam is effectively rotated about a fixed pivot, as opposed to being translated as with the lateral positioning described above." (Col. 3, lines 37-39).

Regarding claim 45, the system of claim 35, further comprising a controller configured to: receive FFP data from the FFP optical measurement system, and control the stage based on the FFP data is disclosed.

"The automated beam alignment system of the preferred embodiment of FIG. 1 includes a beam detection unit 100, a beam steering unit 200, a driver 310 for the beam steering unit 200, a trigger unit 330, a controller 300 and detector electronics 320." (Col. 4, lines 16-19).

Regarding claim 46, the system of claim 36, further comprising a controller configured to: receive FFP data from the FFP optical measurement system, and control the holding mechanism based on the FFP data is disclosed.

See Basting et al's teachings above.

Regarding claim 47, the system of claim 46, further comprising a fixing mechanism configured to fix the position of the at least one optical component, and wherein the controller is further configured to control the fixing mechanism is disclosed.

See Basting et al's teachings above.

Regarding claim 48, the system of claim 46, wherein the controller is further configured to: receive near field pattern (NFP) data from a NFP optical measurement system, and control the holding mechanism based on the NFP data is disclosed.

"At the near-field location, which is close to the laser beam exit 20, an intensity distribution of the laser beam is measured. That is, an intensity distribution, or laser beam profile, is measured at the near-field location." (Col. 7, lines 11-14).

Regarding claim 49, a system for assembling an optical module, the system comprising: a light-emitting element; at least one optical component configured to receive a light emitted from the light-emitting element; a FFP optical measurement system configured to measure an FFP of a light output from the at least one optical component; and a holding mechanism configured to position the at least one optical component based on the FFP is disclosed.

See Basting et al's teachings above.

Regarding claim 50, the system of claim 49, wherein the FFP optical measurement system is configured to measure at least one of a divergent angle and an axis of the light output from the at least one optical component is disclosed.

See Basting et al's teaching in regards to claim 3.

Regarding claim 51, the system of claim 50, wherein the holding mechanism is configured to position the at least one optical component based on the at least one of the divergent angle and the axis is disclosed.

See Basting et al's teaching in regards to claims 3 and 4.

Regarding claim 52, the system of claim 49, further comprising a fixing mechanism configured to fix the position of the at least one optical component is disclosed.

See Basting et al's teachings above.

Regarding claim 53, the system of claim 52, wherein the fixing mechanism comprises a laser configured to weld at least one optical component is disclosed.

See Basting et al's teachings above.

Regarding claim 58, the system of claim 49, further comprising a controller configured to: receive FFP data from the FFP optical measurement system, and control the stage based on the FFP data is disclosed.

See Basting et al's teachings above.

Regarding claim 59, the system of claim 58, further comprising a fixing mechanism configured to fix the position of the at least one optical component,

and wherein the controller is further configured to control the fixing mechanism is disclosed.

See Basting et al's teachings above.

Regarding claim 60, the system of claim 58, wherein the controller is further configured to: receive near field pattern (NFP) data from a NFP optical measurement system, and control the holding mechanism based on the NFP data is disclosed.

See Basting et al's teachings above.

Allowable Subject Matter

4. Claims 6, 9, 23-26, 40-44, and 54-57 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's for allowance: Basting et al teaches a method of assembling an optical module, the above identified prior art of record, taken alone, or in combination with any other prior art, fails to teach or fairly suggest the specific features of the present claimed invention, such as the method wherein the step of fixing comprises welding the at least one optical component with a laser, the steps of detecting a near field pattern (NFP) of the light output from the at least one optical component; and positioning the at least one optical component based on the NFP, wherein the step of positioning based on the NFP is performed before the step of positioning based on the FFP, the system for assembling an optical code wherein the at least one optical

component comprises means for collimating the light emitted from the light-emitting element, and wherein the at least one optical component comprises means for focusing a collimated light output from the means for collimating.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Schweizer et al (5,087,811), Witte et al (4,514,849), King (4,146,329), Scifres et al (4,656,641), Weiner et al (5,103,090), Trepagnier (5,400,132), and Vauchy et al (4,173,414).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Allyson Sanders* whose telephone number is (703) 305-5779. The examiner can normally be reached between the hours of 7:30AM to 4:00PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee, can be reached on (703) 305-3503. The fax phone number for this Group is (703) 308-7722, (703) 308-7724, or (703) 308-7382.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [**allyson.sanders@uspto.gov**].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published `in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Allyson Sanders
Patent Examiner
Art Unit 2876
March 6, 2003

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